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AUTHOR Babey, Evelyn R.
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ABSTRACT

When planning an office renovation, a manager should design an office layout that is efficient and should consider the psychological aspects of office design, including sound level, color harmony, and lighting. The manager must also have a good understanding of all phases of the project plan and the timing involved. There are basically five phases to any renovation project: the program development phase; the interior planning and conceptual design phase; the design development phase; the preparation of drawings for interior construction; and site supervision, including monitoring schedules and budgets and coordinating all parties involved in the renovation process. The manager must carefully evaluate the functions of the office, the interactions unit, traffic patterns, levels of sound and lighting, electrical and telecommunications needs, harmonious color schemes, and the needs of staff; and combine them to create a comfortable and satisfying work environment as the budget allows. (Contains 11 references) (LPT)

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Renovating Interior Office Space: What A Manager Needs To Consider

Evelyn R. Babey

University of California, Davis

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The average worker, including the manager, spends more time in his/her office environment than anywhere else. The manager wants an office that is functionally efficient, cost effective, and attractive and a staff that is satisfied and comfortable in the work environment. When renovating interior office space, a manager, therefore, must not only be cognizant of the need to plan an office layout that is efficient but must also consider psychological aspects of office design, including sound level, color harmony and lighting. All of these things become considerations when contemplating an interior space renovation project.

A manager who is considering an office renovation project should have a good understanding of the phases of such a project and the timing involved. The more comprehensive the project the more detail is required in each phase. In general there are five phases to any renovation project.

Phase I is program development. "This phase analyzes needs and provides quantitative and qualitative information as a basis for planning and design direction" (Kaneko, p. 73).

Phase II is the interior planning and conceptual design phase. This phase translates "the business and esthetics needs and goals defined by the facilities program into a concept for physical facilities" (Kaneko, p. 73).

Phase III is the design development phase. This is the final planning phase and the last step in this phase provides a space plan that "shows individual offices, work stations and support areas. All of the furniture is shown as well as locations of doors and windows. The plans and furniture layouts are drawn to scale and provide a detailed view of how the office will look when occupied" (Kaneko, p. 74).

Phase IV is the preparation of drawings for interior construction, "including ceiling plans, architectural details, power and telephone outlets and partition plans. Work is coordinated with engineers and contractors, furniture specifications are prepared, and bids are let" (Kaneko, p. 74).

Phase V, the final phase is site supervision including "monitoring schedules and budgets, as well as coordinating and supervising all parties involved in space construction, furniture and furnishing deliveries and installation . . . ." (Kaneko, p. 74).

In planning for a renovation the first thing a manager must do is analyze how the physical space is to be used. Job functions and workflow must be analyzed. How do people and units interact? Are there some units that interact on an ongoing basis and thus should be situated adjacent to one another so that

communications are most efficient?

> The ability to communicate is a paramount issue in offices. In . . . [a] study done by People Space Architecture Company in an insurance office building it was documented that each individual conducted an average of sixteen conversations per hour or 38% of his/her work time. The ease with which these work and social interactions can be conducted provide a good measure of the functionability of the office space (People Space Architecture Company).

What are the traffic patterns of the office? Does the public have access to the office in general, to certain units or do they remain in a reception space. The space plan must allow for efficient circulation of people and must meet the criteria of the fire marshall and a host of other state and federal regulations including access by the handicapped (The Office, October, 1990, p. 71).

Space standards for staff must be considered. Do all staff need the same amount of space or should space be related to their job function? For example, staff who have a lot of public contact at their desk usually need more work space than staff who do not. They need space for people to sit down. A staff member who does a variety of tasks may need more space for equipment such as a drafting board.

Furniture standards are another consideration. If staff use computers as part of their job then furniture selected must accommodate their use (The Office, October, 1990, p. 63). Chairs are particularly important because office workers generally spend most of their day sitting but not always in the same position (Cullen, p. 32).

Who needs privacy and when? For most organizations the best office plan is some combination of conventional (closed) office and open-office landscaping design. Open landscape designs with moveable panels provide for more flexibility and create a sense of openness. Closed offices take more space and restrict future movement, however, they do provide for more privacy. If the needs of the organization are such that some private offices are required, the most efficient location of them is on the perimeter of the floor. The combination of private offices, conference rooms and open landscaping in one area promotes a high level of productivity (Kaneko, p. 74).

Another concern that requires careful analysis and planning is the technological state of the office. Is the electrical system adequate? Does it allow for future growth? Can the

building handle additional wiring? Advanced electronic equipment requires "extensive cabling, elaborate heat removal and air-conditioning systems and non-reflective lighting systems" (Kaneko, p. 74). These questions must be addressed in any facilities plan. The goals are to maintain a balance between man and machine and to build in the flexibility that will accommodate both.

Acoustical design is very important particularly when using an open landscape design. Distraction due to surrounding noise is a commonly raised objection to open landscape workspaces. Acoustical design, therefore, must consider sound isolation, sound reflection, and sound absorption.

> Good acoustics are critical to all . . . situations that by nature produce noise and by necessity require quiet. . . . Architectural acoustics are basically concerned with two objectives: (1) providing good hearing conditions within a given space by controlling the dilution, impact, and duration of sound waves, and (2) providing a satisfactory acoustical environment by creating barriers against unwanted sounds originating outside the space (Halstead, 1974, p. 504).

Reflection of sound "depends on the ability of material to absorb sound energy. Hard, dense material absorbs very little sound. Soft, porous materials absorb high proportions of sound and reflect little" (Halstead, 1974, p. 505). Moveable panels of soft, porous material absorb a great deal of sound creating a more private work space. Acoustical wall covering on any wall also aids in sound absorption. The literature on acoustical design further stresses that "acoustically absorptive floor covering reduces within room noise, thereby contributing added sound absorption" (Halstead, 1974, p. 505).

Color schemes are also important in creating a pleasing and functional office environment.

> Color is not simple a matter of personal preference but relates to function. If color distracts rather than aids vision, it causes undo eye strain, impairs human performance, or otherwise impedes the efficient conduct of work, it should not be used. The proper scientific control of color while not governed by academic rules, is subject to . . . principles [two of which are] softness and coolness of color. . . . (Halstead, 1974, p. 502).

Colors such as light blue or green have a focalizing effect. They tend to remove outside distractions and are conducive to mental concentration (Halstead, 1974, p. 502). Accent colors

also add to a eye-pleasing interior office design. Light blue and off white panels with off white cabinets and mauve colored chairs create such an environment.

Office lighting is another extremely important interior design component. "The key to effective office lighting is the recognition of the significant impact it can have on the quality, quantity, and cost of an office's work products" (Wareham, p. 80). Lighting is of particular concern if the staff use computer terminals. It is best to diffuse the lighting, so that light images from ceiling fixtures are not reflected by the screen. Indirect lighting achieves this condition.

> The ceiling becomes a diffuse reflecting surface, avoiding sharply directed beams of light and spreading the reflected light in multiple directions. This creates a shadowless light environment. As glare is essentially a function of contrast between brightly lighted and dark areas, avoidance of it produces a flat, evenly lighted screen (Styne, p. 77).

Supplementary task lighting should also be considered. Reading documents and handwritten notes requires a higher level of light than that produced by indirect light and task lighting provides it. People tend to prefer task lighting they can adjust such as table lamps, moveable floor lamps, or drafting lamps. Task lighting can be incorporated into hanging cabinets or moveable panels but such lighting provides less flexibility (Styne, p. 78).

Another lighting consideration and one that is cost saving, is to group work stations and tasks that require similar lighting levels and adjust their lighting output. Placing work stations that require high levels of light near windows will reduce the level of light that must be produced by lighting fixtures (The Office, June, 1990, p. 63). These changes should only be considered if the groupings by light level need do not impede office interaction efficiency.

Lighting designed around tasks increases productivity. Improved lighting has been shown to lead "to a variety of benefits, including enhanced employee morale, fewer absences and improved safety and security" (Wareham, p. 79).

Lighting also affects color.

> The difference in the composition of phosphors cause fluorescent lamps to produce different kinds of "white light." For example, cool white fluorescent lamps produce little energy in the

> longer wavelength part of the spectrum, and so give a poor rendition of reds; warm white fluorescent lamps produce better red rendition as they have more energy output in that part of their spectrum (Styne, March, 1990, p. 78).

The type of lighting makes surface color different in hue and saturation. "The color of the light source influences not only the appearance of the surface colors but also the appearance of the space" (Styne, March, 1990, p. 78). Color, then is an important consideration in its own right, but also in conjunction with the type of light source. The "right" combination of color and light will provide a visually comfortable office. The "wrong" combination will do just the opposite.

Interior space design concerns the people that work in that space, and a critical component of any facilities planning is considering and asking the participation of people who are to be affected by the reorganization of "their" space. Environmental psychology stresses people-places relationships. "The nature of the physical setting of organizations, and the process through which they are created, can have a significant impact on the quality of work life and on the effectiveness of . . . programs" (Becker, 1983, p. vi).

The concept of social design with theoretical influences from ecology and humanistic psychology is defined as a "liaison between design [architecture] and behavioral sciences" (Sommer, 1983, p. 6). It considers the occupants' satisfaction as an essential part of the design process and it emphasizes identifying user values and bringing them into this process (Sommer, 1983, p. ix). Social design then is

> working with people rather than for them; involving people in the planning and management of the spaces around them; . . . . The goals [of space reorganization] can be realized only within the structures of large organizations, which include the people for whom a given project is planned (Sommer, 1983, p. 7).

In summary, interior space design is not an easy task. A manager must have an overall sense of all phases of a project plan. The manager must carefully evaluate the functions of the office, the interactions of units, traffic patterns, levels of sound, levels of lighting, harmonious color schemes, electrical and telecommunication needs, and the needs of staff, to name a few, and put them all together to create as comfortable and satisfying a work environment as budget allows.

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